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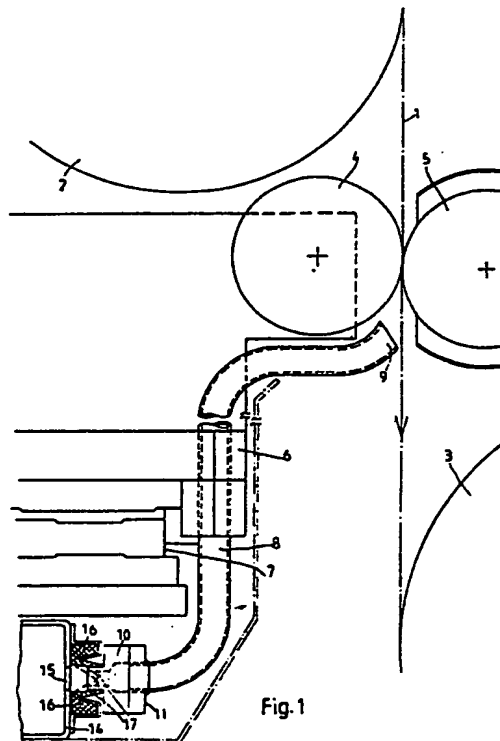
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(54) **Reel cutting machine with dust extractor**

(57) A reel cutting machine longitudinal cuts continuous webs of material (1) by means of cutters (4, 5) mounted on carriages (6) which are transportable on guides (7) transversally to the direction of motion of the web of material to be cut and which each bear at least for each cutter a suction nozzle (9) on a suction pipe. A suction slit (15) of a suction box (14) is directed parallel to said guide (7). Each suction tube takes the form of a tube (8) having a connecting sleeve (11). A connection head (10) of each connecting sleeve (11) has a shuttle-shaped cross section of which the longitudinal axis is directed parallel to the suction slit (15). The suction slit (15) is closed by mutually opposite and mutually prestressed flexible lips (17) which are urged to press against the side wall periphery of the connection head (10).



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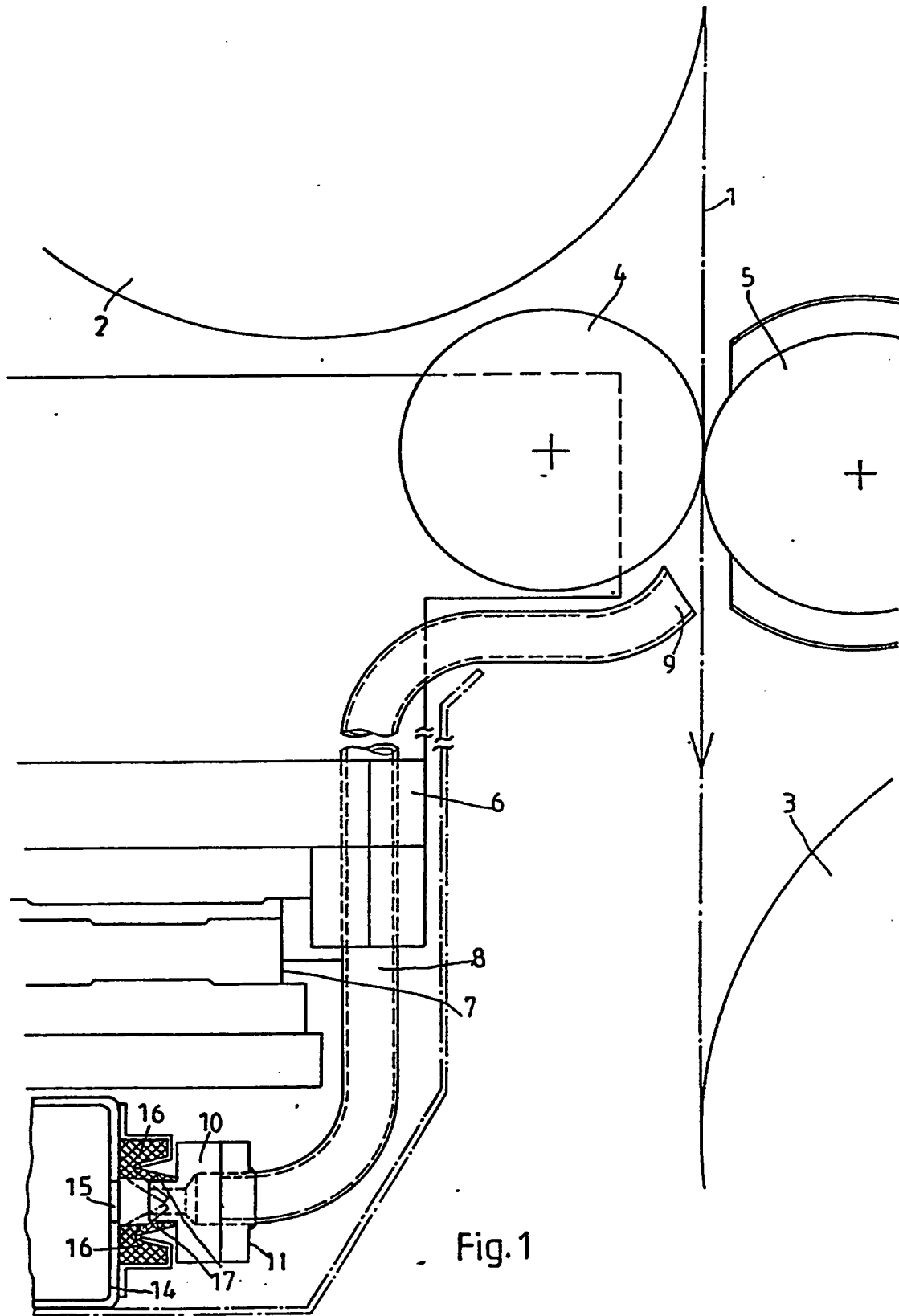


Fig. 1

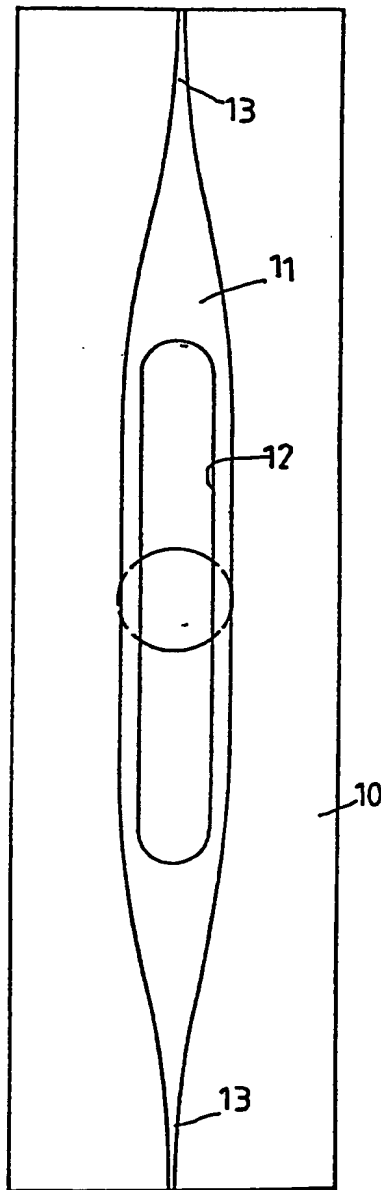


Fig. 2

TITLE

Reel cutting machine for longitudinal cutting
of continuous web of material.

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The invention relates to a reel cutting machine for longitudinal cutting of continuous webs of material by means of carriages which are transportable on guides transversally to the direction of motion of the web of material to be cut and which each bear a cutter and a counter-cutter and which each bear at least for each cutter a suction nozzle on a suction pipe.

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Cutting operations inevitably cause dust in the processing of sensitive strips of material such as film, particularly magnetic tape foil; this dust has to be removed so as to avoid all ill effects. This is the only way of ensuring clean working premises.

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For the removal of the dust accompanying cutting processes suction nozzles are known of which each is connected to a suction branch via a suction conduit of the hose type. The conduits have to be detached from the branches each time the cutters are adapted to a different cutting width or other adjustments made, because the suction branches are fixed and do not allow for the required alteration to the carriages. Long set-up

times are thus involved.

5 The purpose of the invention is to construct the suction apparatus in such a way that the suction nozzles remain connected to the suction apparatus even during the displacement of the carriage, so that no additional set-up operations or increases in the set-up times for the suction nozzles or suction apparatus are necessary.

10 The invention solves this problem by providing that a suction slit of a suction box is directed parallel to said guide, each suction tube takes the form of a tube having a connecting sleeve, a connection head of each connecting sleeve has a shuttle-shaped cross section whose longitudinal axis is directed parallel to the suction slit and the suction slit is closed by mutually opposite and mutually prestressed flexible lips which are urged to press against the side wall periphery of the said connection head.

15 The invention differs from the prior art in that the suction tube is transported together with the carriage and moves the connection head along the suction slit. The shuttle-like construction of the connection head reliably seals it off from the suction slit and thus ensures the complete removal of the dust by suction.

20 The sealing system is made especially effective when the lips are mounted on sealing strips.

A particularly advantageous method of adjusting the position of the suction head within the lips is obtained by providing the cross section of the connection head at each end with a profile terminating in a point.

5 By way of example a preferred embodiment of the invention will be described with reference to the accompanying drawings, in which:

Figure 1 is a schematic section through a reel cutting machine, and

10 Figure 2 is a view to an enlarged scale of the connection head shown in Figure 1.

Figure 1 shows a strip of material 1, e.g. a foil, fed into position over a deflecting roller 2 and removed via a further deflecting roller 3. The strip of material 1 runs vertically downwards. A number of cutting stations (one only being shown in Figure 1) each having a cutter 4 and a counter-cutter 5, are distributed over the width of the web of material. The co-ordination of the cutters is only shown schematically.

20 Each cutter 4 is mounted on a carriage 6. The carriage 6 is movable along a guide 7 transversally to the direction of motion of the web of material. The driving means for the carriages 6 and cutters 4 is not shown. The counter-cutters 5 are likewise mounted on carriages and guides, which are not illustrated.

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On the carriage 6 is mounted a suction tube 8 where suction nozzle 9 is directed towards the cutting gap and whose suction removes the dust accompanying the cutting process. The tube 8 is of mainly rigid construction. The tube 8 bears a connection head 10 whose connecting sleeve 11 is shuttle-shaped in cross section.

The shuttle-shaped cross section is particularly clear from Figure 2. Inside the connecting sleeve 11 may be seen elongate orifice 12, the ends of the orifice having profiles 13 terminating in points. The longitudinal axis of the orifice 12 is directed transversally to the direction of motion of the web of material 1 and parallel to the guide 7.

A suction box with a suction slit 15 is likewise parallel to the guide 7. Sealing strips 16, having flexible lips 17 directed towards each other and prestressed in relation to each other, are clamped on both sides of the suction slit 15. The lips 17 normally rest in a prestressed manner against each other, as shown by the dot-and-dash lines, the suction box 14 thus being tightly sealed. The shuttle-shaped connection head 10 engages the space between the lips 17 and moves the latter away from each other. The lips 17 close in the zone of each of the pointed profiles 13, so that the vacuum inside the suction box 14 is maintained and does

not collapse.

When the reel cutting machine has to be adjusted or repaired the operation of moving the carriages 6 is normally performed while the suction box 14 is ventilated.

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CLAIMS

1. Reel cutting machine for longitudinal cutting of continuous webs of material by means of carriages which are transportable on guides transversally to the direction of motion of the web of material to be cut and which each bear a cutter and a counter-cutter and which each bear at least for each cutter a suction nozzle on a suction pipe, wherein a suction slit of a suction box is directed parallel to said guide, each suction tube takes the form of a tube having a connecting sleeve, a connection head of each connecting sleeve has a shuttle-shaped cross section whose longitudinal axis is directed parallel to the suction slit and the suction slit is closed by mutually opposite and mutually prestressed flexible lips which are urged to press against the side wall periphery of the said connection head.

2. Reel cutting machine in accordance with Claim 1, wherein the lips are mounted on sealing strips.

3. Reel cutting machine in accordance with Claim 1 or Claim 2, wherein the cross section of said connection head is provided at both its ends with profiles terminating in a point.

4. Reel cutting machine substantially as herein
described and illustrated by the accompanying drawings.

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